
RI WETLANDS BIOMONITORING
NOTES FROM MEETING WITH WETLAND PARTNERS JULY 29, 2004

TO: RI Wetlands Partners

FROM: Deb Pelton

SUBJECT: 7/29/04 Meeting – Introduction to Wetlands Biomonitoring Project and request for input regarding wetland monitoring data needs, priorities, uses.

DATE: 8/13/04

ATTENDEES:

Dori Boardman, RIAWS
Marty Wencek, DEM
Peter Lockwood, Mason & Associates, Inc.
Pete August, URI
Frank Golet, URI
Fred Presley, DEM
Steve Tyrrell, DEM
Ginger Brown, RINHS
Eugenia Marks, Audubon Society of RI
Peter Paton, URI
Peter Holmes, EPA Region 1
Jim Eikenberry, UVM
Sue Kiernan, DEM
Russ Chateauneuf, DEM
Wenley Ferguson, Save the Bay
Deb Pelton, DEM
Carol Murphy, DEM

INTRODUCTION TO WETLAND BIOMONITORING:

Participants introduced themselves at the beginning of the meeting. We also noted that there were other individuals we corresponded with from organizations including TNC, NRCS, CRMC, and EPA Atlantic Ecology Division who could not attend.

Deb gave an overview of wetland biomonitoring in the form of a PowerPoint presentation. Slides are available if anyone is interested in seeing them.

Presentation included the following:

1. The Clean Water Act requires that all states report on the quality of their waters. While all states have been monitoring the quality of their surface waters, most states have not conducted systematic monitoring of wetlands. Because wetlands are also considered waters of the state, EPA is encouraging states to begin incorporating wetlands into their comprehensive water monitoring programs. To aid states in this effort, EPA provides priority grant funding for wetland biomonitoring projects. RI hired Deb through NEIWPCC with EPA grant funds to work on a plan for wetland biomonitoring as part of the RI comprehensive water monitoring strategy.
2. Bioassessments are based on the premise that the community of plants and animals living in a wetland will reflect the biological integrity or “health” of a wetland. In other words, the biological communities reflect the cumulative effect of multiple stressors over time. Bioassessment methods and application were originally developed for streams and lakes. States are now developing and adapting methods for wetlands. There has been a shift in focus from just reporting losses and gains of wetland acreage to also looking at ecological integrity of wetlands.

3. EPA is advising states to pursue a 3-tiered approach to wetland assessment:
- a. Level 1 - Landscape Assessment – uses GIS; wetlands and landuse coverages, is a preliminary view of wetland condition on a large scale, used, for example, to set priorities for additional, site-specific monitoring.
 - b. Level 2 - Rapid Field Assessment – ½ to 1 day in the field, several different methods developed, data collection is relatively simple involving a checklist of sorts, measures condition and stressors to a wetland, similar to functional assessment methods, but also considers ecological condition, can be used to validate level 1 assessments.
 - c. Level 3 - Site Assessment - in which an assemblage (vegetation, invertebrates, amphibians, birds, algae) is collected and analyzed to generate indices of biological integrity - a numerical and descriptive value that indicates ecological health as a function of human disturbance. Another site level assessment is the HGM (hydrogeomorphic) approach, in which models are developed based on characteristics of the landscape. Site assessments are labor and cost intensive, but provide more accurate, higher resolution information than the landscape or rapid assessment methods.

All levels of assessment provide valuable information, and are intended to be used together, if possible. Level 3 work validates level 2 work, and both validate level 1 assessments.

4. Several other states are also developing wetland monitoring plans and methods. Some states are much further along and can provide excellent examples for RI to follow. However, still in early stages of development and implementation of wetland monitoring projects. Not widely used yet for regulatory/management decisions, but awareness is growing with quantity and quality of information being generated.
5. While other states have used grant funds to implement pilot projects in the field, RI wanted to create a plan for monitoring first. Deb was hired through NEIWPCC with EPA grant money (104b(3)) to work on this plan. Background work for the plan has included a review of what other states are doing and interviews with RI wetland scientists to determine what's known about wetlands in RI.
6. At this point we're soliciting input from DEM staff and wetland partners outside of DEM to identify specific wetland monitoring needs for RI. A draft list of possible management uses for wetland monitoring data was generated based on feedback Deb and Carol received prior to the meeting. This list was handed out at the meeting, and the floor was open for discussion about the project in general, and about specific wetland monitoring needs.

A summary of the subsequent discussion follows.

DISCUSSION:

Peter Lockwood responded by saying there is a need for monitoring information, and that assessment methods are challenging. What are the indicators? Because there's so much we don't know, there is a need for basic research.

Eugenia Marks agreed with Peter and suggested we try to frame the topic of tier-level sampling in a way that would open the discussion for more detailed information. We have to acknowledge that we don't know whether it's structure, temperature, or function, for example, that influences the biology in a particular class of wetlands. We should be concerned with public policy, which is at a larger scale than scientific research... we need to protect wetland edges and make big buffers.

Peter Lockwood brought up another important concern, which was also raised by Dave Reis in an email message to Deb prior to the meeting: The idea of a quantitative valuation and resulting scoring or ranking of wetlands can be problematic in the regulatory world. Possible misuse and manipulation of information could lead to increased development pressure on wetlands in poor condition.

Eugenia commented that we need to make our assumptions about this work very explicit and make a clear policy statement about why we are protecting wetlands... for the public good. Public policy operates at a different level than we are at this forum.

Frank Golet raised several questions: Are there realistic uses for this information? What are the real needs, and how could this information benefit users and managers? There are some types of monitoring that would provide information for information's sake. A real benefit would be to gather information to change programs. Can you

realistically do anything about something you know about? For example, we know sedimentation is a problem. Also, we know that removal of forests causes impacts to wetlands, but can DEM do anything about it?

Another comment by Frank was that by the time you monitor changes in the biological community it's too late. Therefore, we also need to know the physical and chemical indicators to detect changes in the factors supporting the biological communities.

Frank also sees problems in setting reference standards. How do you do it? Also, how do you design scheme for gathering data? We can't sample all the wetlands, so how do you design an appropriate sampling scheme.

Peter Paton agreed with Frank and added two other questions: For how long are we monitoring? 1 yr, 5 yrs, longer-term? And, what's the realistic budget? The amount of money available determines what we can do. Why develop plans you can't institute?

Sue Kiernan responded to this question about budget. We need to come up with what's most important to do, then sell it to get money. We need a thoughtful way to tell people why it's important to do x, y, z realistically. The people who make the decisions about money need to be sold on why it's important. ex. invasive spp.

Peter Holmes spoke in favor of a landscape analysis tool. HQ is pushing for information about wetland condition (it's an EPA priority). We need the underlying data to be able to push the GIS button and make the high-impact, informative visual maps. Carol added that level 1 results could be useful for conservation commissions and watershed councils.

Wenley Ferguson asked how data are used in other states and whether it is being applied in the regulatory world. Deb has been asking states to share examples of how data are used in this manner and has been learning that it is relatively early in this process. States are still developing methods and gathering useful data about wetland condition. This information is not yet widely applied in regulatory and management decisions, however, there is a growing interest in its application and value. For example, in Maine, permitting staff are approaching the monitoring people and asking what information they can use for permitting decisions.

Pete August agreed with most of Frank's comments, with the exception that "once you're biomonitoring program has detected a change, it's too late." Pete says there's an audience that needs to know where change hasn't occurred – very important for conservation community outside DEM. Carol agreed saying that she communicates often with community people wanting to know how to protect their wetlands. They want to know what they can do to help.

Eugenia suggested we consider the bigger picture again. In general, people don't understand where we (the wetland partners) are in terms of wetland protection. We should decide where we want to lead people. Protecting habitat, for example, is important. One idea is that we take an inventory of what's known about RI wetlands, which is being done as part of this project. We have to decide how we want to effect public policy – consider land not otherwise protected by law (example that trees have no standing). What is it that we're trying to protect? Is it water quality? quantity? Be clear about what we're doing and how to sell.

Fred Presley envisions that we should develop a database of critical wetlands that must be protected, and build it into the regulatory program – those that are not to be touched. He suggests starting with a tier 1 analysis for the whole state, which would require an update of the wetlands data set. Then we could have developers gather the data we need since they're out there already. We can ramp up what's asked of them – they can gather more information. To ensure good quality data we could have a program to certify biologists (similar to a soil evaluator certification). We can build a DB for up to 5 years then step back and look at what we have. Regarding what Eugenia said about trees not having rights, Fred says it doesn't have to be that way, referring to Maryland's example of forest conservation. Fred believes we need political will to do this work and that we could tie in to Bay initiative, using existing momentum. Put more burden on developers to gather data.

Russ Chateaufort found Fred's idea interesting and said there is flexibility in protecting buffers in subdivisions more than for single lot development. He expressed concern about getting developers to gather good quality data. (Fred said again that biologists should be certified). To Frank's comment, "is it worth the effort?" Russ says there are things we don't know about wetlands. Permitting process w/retention ponds, for example, changes hydrology. If we find out more information maybe we can change the process. We're supposed to protect the purity and integrity of wetlands but there are limits in the laws. Better information on wetlands and surrounding wetlands would provide better information for statutory changes. Russ is not optimistic, but without data, no information means no changes and we need support for statutory changes regarding buffers sizes, for example.

Frank Golet outlined a list of things to know about wetlands:

- total loss of wetlands by type – rates of loss, by 5 year interval
- causes of loss – includes illegal alterations, permitted loss, failed mitigation
- monitoring of restored wetlands
- potential problems, stresses, impacts: water chemistry changes, GW levels, SW depth and hydroperiod
- buffers – towns should increase buffer zoning – inventory the status of vegetated zones adjacent to wetlands, especially where changes are happening rapidly
- rare and endangered species protection, invasive spp
- for tidal wetlands – salinity changes, invasive spp
- bird changes – find the wetland dependent birds and protect forest areas around those wetlands.
- impacts of road density, housing density, forest removal on many spp has been widely documented – consider in local town planning, work with local people

NOTE: Some of the items in the above list are already included on the list of data needs and possible management uses for wetlands monitoring data. Items that were not on the list have been added and are summarized below.

Ginger Brown discussed the issue of wetland buffers. She doesn't like that word, because the animals she studies (Odonates) use the areas adjacent to wetlands as 'core habitat,' not buffer. What is the right amount of area around wetlands for integrity?

Frank stated that we also need to consider what a reasonable distance is for jurisdiction. Even if it is shown that animals need 600 ft. of buffer, it's not realistic to regulate that distance around wetlands.

Peter Paton suggested that resource economists may also be able to contribute information about what the public values, which might prove useful as we develop this plan.

Steve Tyrrell expressed frustration about wetland violations that can't be addressed with limited staff in their group and asked why we should consider doing something new when there is limited resources to keep up with existing problems. Really need compliance monitoring. Carol replied that maybe there's something they can do to change their approach and pointed out that conservation commissions or watershed councils have offered to help DEM. Russ also pointed out that new legislation is in place to increase fines for offenders, which will hopefully be a deterrent.

Meeting was adjourned at 11:45 am.

ADDITIONS TO POSSIBLE MANAGEMENT NEEDS/USES FOR MONITORING DATA:

Based on what we heard at the meeting, the following are additions to our list of possible needs and uses for monitoring data:

- basic scientific research to better understand wetlands
- describe rate of wetland loss by type
- describe impacts of increased road density, housing density, forest removal on wetland communities
- monitor physical and chemical, as well as biological parameters

NEXT STEPS:

In the coming weeks, we will consider possible objectives for the plan in light of the feedback we've received from DEM staff and from wetland partners outside of DEM. Once objectives are laid out, we will begin to identify appropriate methods to meet our objectives. We will also continue to meet with people in RI to gather information about what's known about RI's wetlands.